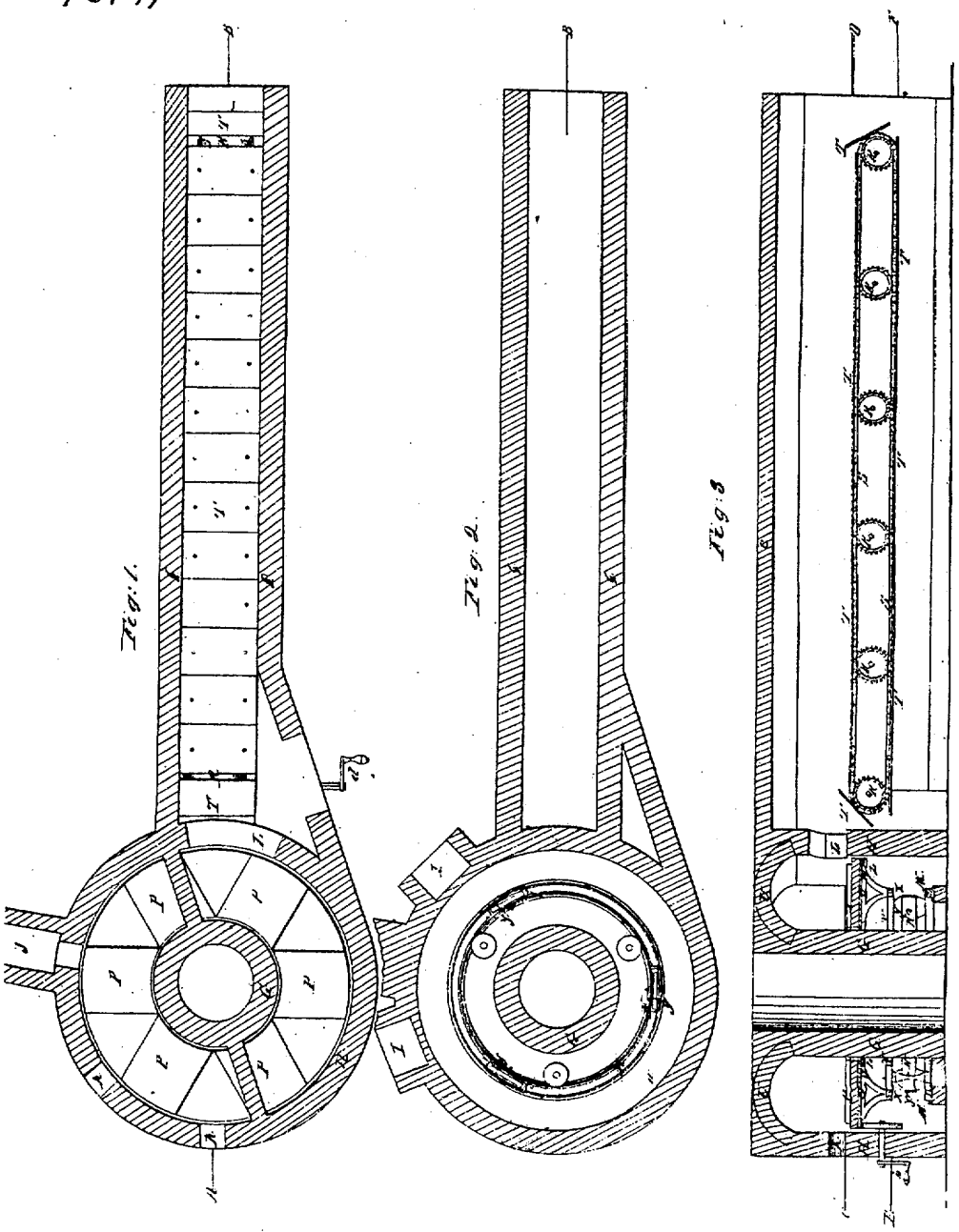
I. I. Adams.

Glass Furnace.

RX No 44. Reissued Aug. 6, 1842.

7014X RELATED DOC



UNITED STATES PATENT OFFICE.

Rx 44

JOHN J. ADAMS, OF WINSLOW, NEW JERSEY.

IMPROVEMENT IN THE PROCESS OF FLATTENING WINDOW-GLASS.

7014X RELATED DOC

Specification forming part of Letters Patent dated April 21, 1832; Reissue No. 44 dated August 6, 1842.

To all whom it may concern:

Be it known that I, JOHN J. ADAMS, late of the city of Washington, District of Columbia, now residing in the town of Winslow, in the county of Gloucester and State of New Jersey, have made an Improvement in the Process of Flattening and Tempering Window-Glass, which is described as follows:

First. The walls inclosing the revolving platform for flattening the glass are made circular, one inner, G, and one outer wall, H, of such diameters as to leave a space between them of about three feet (more or less) in the clear. They are built of brick or stone. Fire-arches I or flues are made through the outer wall for the admission of fuel. One opening is left near the top of the outer wall for the stick-hole J, through which the glass cylinders are entered. Two other openings at the same height as the former are left for flattening mouths K, and at proper distances for operation. A fourth opening, L, is left near the cooling-apartment for laying off the glass from the aforesaid revolving platform on the cooling or tempering apparatus. An arch, U, springing from the outer and inner wall, closes the hole on the top, covering the several apartments for flattening, &c.

Secondly. A circular railway of cast-iron, M, of about seven feet diameter, furnished either with a groove or a flange, is laid down nearly even with the base of the walls and between them. This railway receives the carriage N and the revolving flattening-platform O, next described.

Thirdly. The revolving flattening-platform O is made with a cast-iron ring, V, furnished on its under side with a groove or a flange, X, similar and corresponding to the one on the railway above described. Between the two grooves or flanges are placed three wheels or rollers, Y, of cast-iron, and of about one foot diameter, and at equal distances from each other. These wheels or rollers support the revolving platform, which is fastened to the aforesaid cast-iron ring, raised to the proper height for operation—say about four feet—by means of arms W between the platform and the cast-iron ring. The platform is cast with a rim of cogs, Z, on its outer periphery and on its under side, and is of such size as to admit of any given number of flattening-stones, P, which is at the option of the operator. A cog-wheel or pinion, *a*, is placed near the stick-hole, the cogs of which mesh into those of the rim on the under side of the platform, and its shaft protrudes through the outer wall, where a crank and handle, *b*, is attached to it.

Fourthly. The cooling apparatus consists of two straight walls, Q, of about thirty feet length and three feet width, covered by an arch, *c*, of the same height as the one over the revolving platform. Under this arch and between these walls are placed a number of plates, T, on two endless chains, S, which revolve over two or more drums. These plates are for laying the glass on when it comes off the flattening-stones on the platform, and to convey it off as the plates become full. For this purpose a crank, *d*, is attached to the end of one of the drum-shafts.

Any other known mechanical movement may be substituted for the endless chains, drums, &c., so as to produce a perpetual tempering oven or arch, as is intended by the inventor, no stoppage occurring from the piles becoming full.

Operation: The cylinder of glass is shoved through the stick-hole and put on one of the intermediate spaces to heat. The flattening-platform is then turned, by means of the crank and cog-wheel above described, till another space presents itself in front of the stick-hole. This brings the first-mentioned cylinder of glass in a line with the first flattening-mouth. The glass is then laid open upon the flattening-stone. The platform is again turned till the first cylinder on the flattening-stones comes in a line with the second flattening-mouth, where it is flattened out. This movement also brings the third space in a line with the stick-hole. The platform is then again turned another space, which brings the first cylinder into the cooling-apartment. As soon as, by turning the platform, three sheets of glass are in the cooling-apartment, then the first sheet is placed upon the first cooling-plate. When the first cooling-plate is filled, then the endless chains, or any other known mechanical contrivance substantially the same preferred for that purpose by the operator, is set in motion and moved the space of one plate, and so on till the whole process is gone through.

This above specification bears reference to

RX 44

the restored model and drawings herewith submitted.

The invention herein claimed, and desired to be secured by Letters Patent, is—

The revolving series of flattening-stones on the rotary platform, and the moving cooling apparatus, on which the glass is laid down to temper, instead of being set up in stationary piles, as formerly done, the whole of the above specified apparatus constructed and operating substantially in the manner and on the principles hereinabove set forth.

JOHN J. ADAMS.

Witnesses:
JAMES S. HALL,
FRANCIS BENNE.

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EXAMINER
DIV. 3.

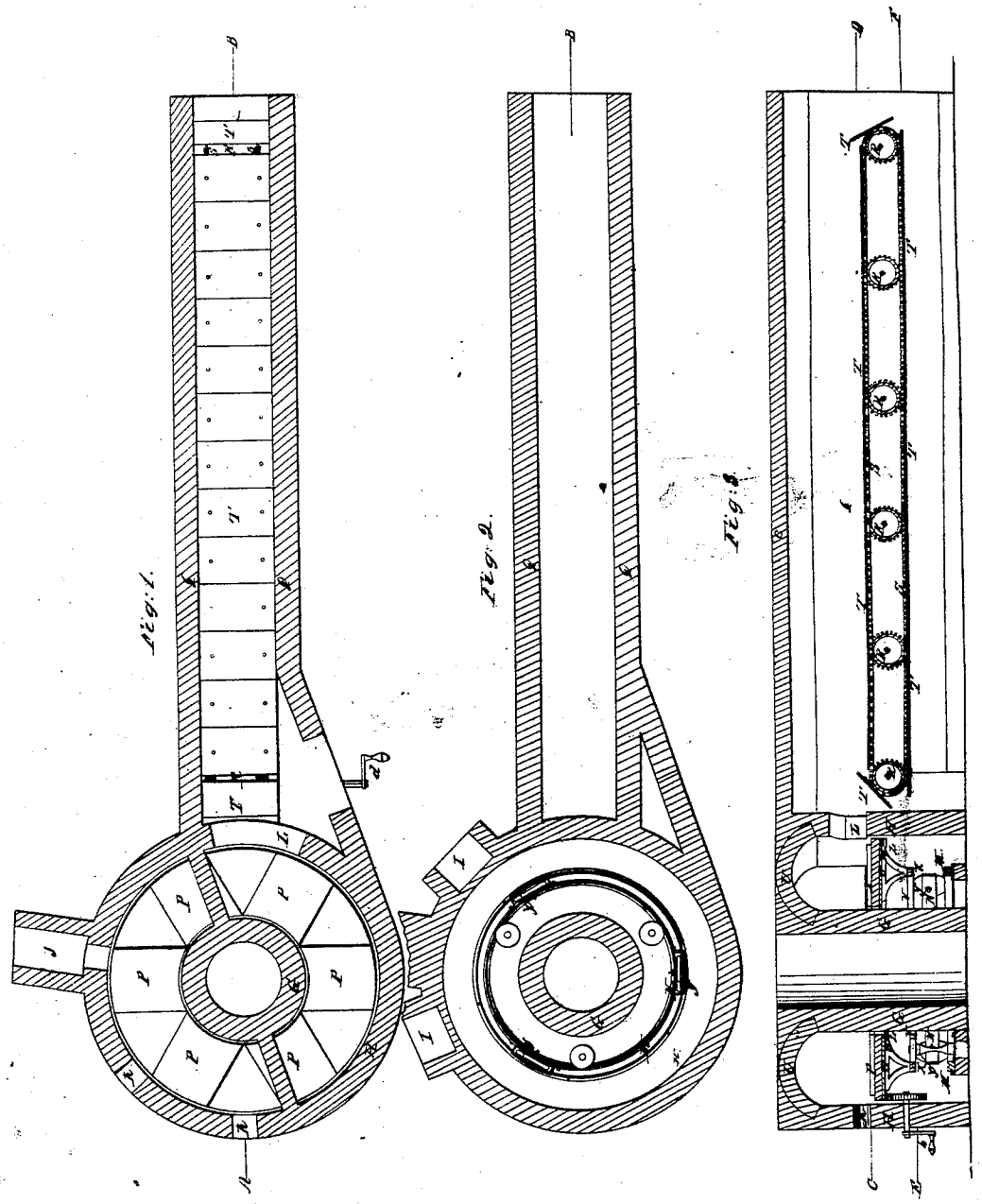
g.

J. J. Adams.

Glass Furnace.

RE No 44.

Reissued Aug. 6, 1842.



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

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This above specification bears reference to the restored model and drawings herewith submitted.

The invention herein claimed, and desired to be secured by Letters Patent, is—

The revolving series of flattening-stones on the rotary platform, and the moving cooling apparatus, on which the glass is laid down to temper, instead of being set up in stationary piles, as formerly done, the whole of the above specified apparatus constructed and operating substantially in the manner and on the principles hereinabove set forth.

JOHN J. ADAMS.

Witnesses:

JAMES S. HALL,

FRANCIS BENNE.

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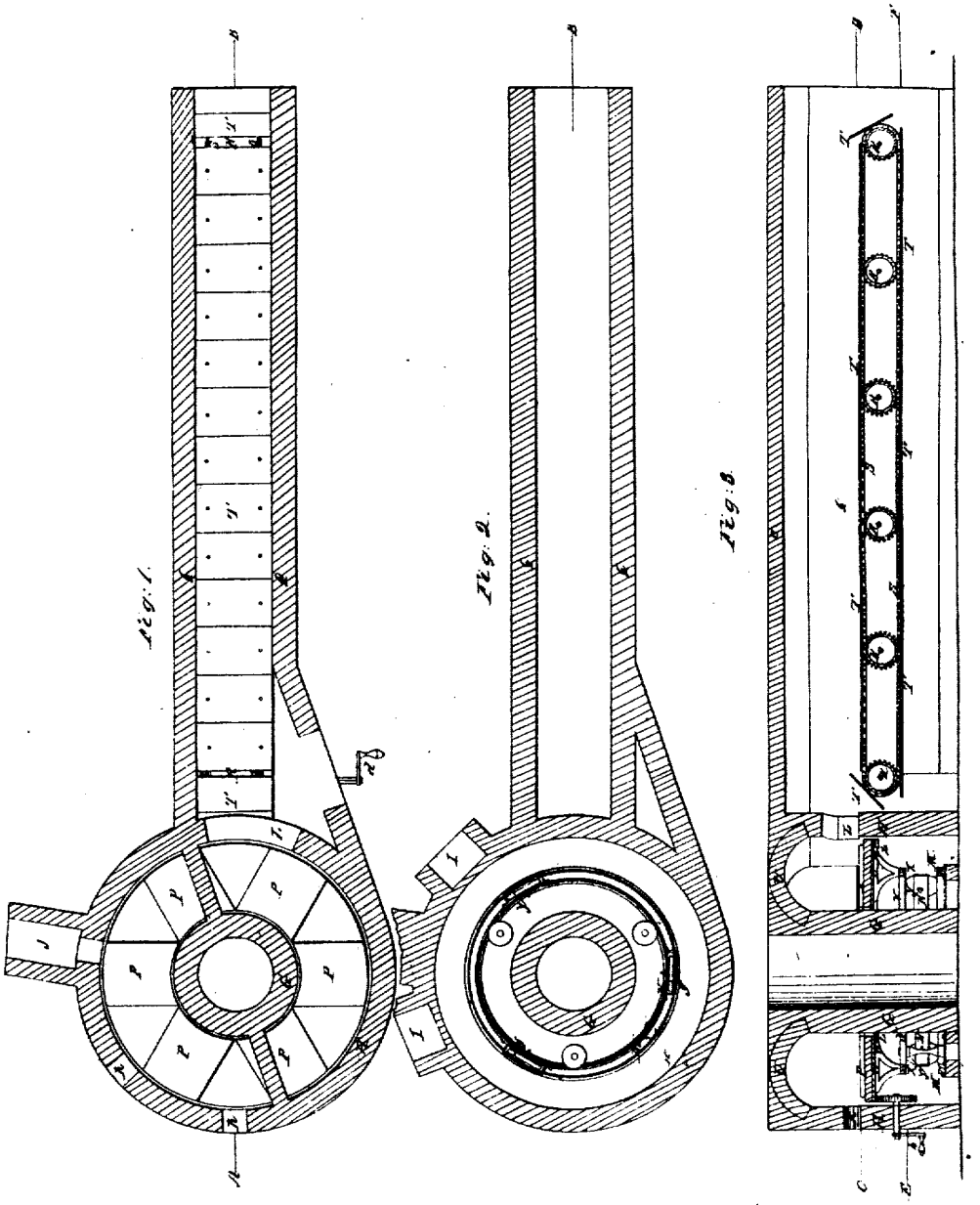
J. J. Adams,

Glass Furnace.

Patented Apr. 21, 1832.



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John J. Adams
Letters Patent Dated April 21. 1832

The Schedule referred to in these Letters Patent, and making part of the same, containing a description in the words of the said John J. Adams himself, of his Improvement in the process of flattening Window Glass.

Be it known, that I John J. Adams, of the City of Washington, and District of Columbia, have made an improvement in the process of flattening Window glass, which is described as follows. 1st The wall, including the machine for flattening, is made circular, of any convenient size, and is usually built of brick or stone. On the base, and on each side, is made to admit fire and fuel. The slick or rear hole for admitting the glass cylinders, is left in the wall, near the top, and within about 8 feet of the tempering arch. Two openings for flattening mouths are also left on the same side with the flattening arch, about 5 or 6 feet apart. On the cooling oven side, an opening is left for taking the glass off the flattening stone upon the cooling or tempering plate. 2d An inner circular wall, of about 4 feet diameter is placed in the centre of the outer circular wall before described. 3 Arches is sprung, resting on the inner and outer circular walls, leaving a circular opening within the inner circular wall of about 3 feet diameter. This may be either built of brick or fire clay. The arch is divided into two parts by mantles or divisions, leaving three of the flattening stones with their intermediate spaces in each apartment. 4 An iron railway, of about 1 foot diameter, made of cast iron is placed on the centre of the before described circular wall, having a groove or flange on it, for admitting the carriage with rollers supporting the flattening apparatus to be next described. 5 The flattening apparatus, is made of sheet iron, and of a size nearly to fill the circular space included within the circular walls; this may be divided into four or six divisions to receive the flattening stones. The flattening stones with their legs rest on bars of cast iron placed on a ring and resting on the before mentioned rollers. 6, The cooling arch is about 30 feet long, and 3 feet wide. Two small chains, about 3 feet apart, are

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models then on 4 or 6 arms or rollers, turning on gudgeons supported on the walls. On these chains are hung a number of sheet iron plates about 3 feet long and 2½ feet wide. The sheets of glass are taken off the flattening stones and placed on these revolving plates to cool. The chimneys for the fire used to pass up thro' the inner circular wall; the smoke passing under the main arch or arches, and out at the cooling arch and cooling mouth. Operation.— The cylinder of glass is moved thro' the stick hole or rear, and put on one of the intermediate spaces to heat; the flattening apparatus is then turned till another space comes in a line with the stick hole; this brings the first mentioned cylinder in a line with the first flattening mouth; the glass is then laid open upon the flattening stone. The flattening apparatus is again turned till the first cylinder on the flattening stone comes in a line with the second flattening mouth, when it is flattened out; this movement also brings the third space in a line with the stick hole. The apparatus is again turned another space, which brings the first cylinder into the cooling apartment— when by turning the apparatus three sheets of glass are in the cooling apartment; then the first sheet is placed upon the first cooling plate. When the first cooling plate is filled, then the endless chain with the cooling plates upon them are turned the space of one plate, by a crank winding placed below; and so on till the business is completed.

The invention ... here claimed and desired to be secured by Letters Patent is the before described process of flattening and cooling glass, particularly by the revolving flattening apparatus, and the revolving cooling plates placed on endless chains, likewise the arches covering the flattening & cooling apparatus: For a further illustration of my invention I refer to the Model and drawing of the same deposited in the Patent Office. In witness whereof I have hereunto subscribed my name before two witnesses this 14th day of April 1832.

Witnesses
William F. Elliot
William C. Trench

John J. Adams
(812 mw)

Ex:
Ch. N.

Recorded Patent Book May 31st 1832